

Warm-Up

$$1) f(x) = 3x^2 - 27$$

$$y = 3x^2 - 27$$

$$1) \text{ find } f(0) = 3(0)^2 - 27 = 0 - 27 = -27$$

$$f(1) = 3(1)^2 - 27 = 3 - 27 = -24$$

$$f(-1) = 3(-1)^2 - 27 = 3 - 27 = -24$$

2.) when does $f(x) = 0$?

when does $y = 0$

$$0 = 3x^2 - 27$$

$$\frac{27}{3} = \frac{3x^2}{3}$$

$$9 = x^2$$

$$\sqrt{9} = x$$

$$\pm 3 = x$$

whenever
we take
 $\sqrt{\quad}$ ans is
+/-

$$0 = 3x^2 - 27$$

$$= 3(x^2 - 9)$$

$$0 = 3(x-3)(x+3)$$

$$x-3=0 \text{ or } x+3=0$$

$$x=3 \quad x=-3$$

HOMEWORK

1) $g(x)=4x+3$, find $g(0)$, $g(1)$, $g(10)$, $g(-10)$

2) $h(t)=6t$, find $h(-3)$, $h(-1)$, $h(0)$, $h(2)$, $h(3)$

3) $p(w)=3w^2$, find $p(0)$, $p(9)$, $p(1)$, $p(0.5)$

$$\begin{array}{lcl}
 1.) & g(0) = 4(0) + 3 & g(-10) = 4(-10) + 3 \\
 & g(0) = 0 + 3 & g(-10) = -40 + 3 \\
 & g(0) = 3 & g(-10) = -37
 \end{array}$$

4) If $g(x)=2x$ and $h(x)=-3x+4$, find $g(1)+h(2)$

5) If $y(x)=3x-1$ and $m(x)=2x^2$, find $y(2)*m(3)$

6) If $r(x)=4x^2+5x-6$ and $n(x)=3$, find $r(1)+n(2)$

$$\begin{array}{lcl}
 4.) & g(1) = 2(1) & h(2) = -3(2) + 4 \\
 & = 2 & = -6 + 4 \\
 & & = -2 \\
 & g(1) + h(2) = 2 + (-2) \\
 & & = 2 - 2 \\
 & & = 0
 \end{array}$$

$$\begin{array}{lcl}
 5.) & y(2) = 3(2) - 1 & m(3) = 2(3)^2 \\
 & = 6 - 1 & = 2(9) \\
 & = 5 & = 18
 \end{array}$$

$$\begin{array}{lcl}
 6.) & r(x) = 4x^2 + 5x - 6 & n(x) = 3 \\
 & r(1) = 4(1)^2 + 5(1) - 6 & y = 3 \\
 & = 4 + 5 - 6 & \text{or } n(x) = 3x^0 \\
 & r(1) = 3 & n(2) = 3
 \end{array}$$

$$P(x) = -2x^2 + 32x - 110$$

x	P(x)
4	$-2(4)^2 + 32(4) - 110 = -2(16) + 128 - 110 = -14$
3	
2	
1	
0	
-1	
-2	
-3	

Solve \Rightarrow Set $P(x) = 0$

$$\begin{aligned}
 0 &= -2x^2 + 32x - 110 \\
 &= -2(x^2 - 16x + 55)
 \end{aligned}$$

find vertex. $x = 11, 5$

$$x_v = \frac{11+5}{2} = 8$$